

CLAIMS

What is claimed is:

- 5        1. A center break switch comprising:  
A base;  
a pair of switch blades, each having a switch contact and each mounted on  
the base by a rotatable support structure combined with an operating mechanism that  
moves the switch blades and their contacts between closed and open positions upon  
10      application of a motive force to the operating mechanism, each switch blade also having  
a line terminal;  
the support structure and operating mechanism being related for rotation  
of each blade's support structure proximate the base with resulting movement of the  
blades and contacts arcuately between the closed and open positions; and  
15      a pair of pry bars, each attached to one of the blades proximate the contact  
and arranged with facing ends to work pivotally against each other during at least part of  
a switch opening operation of the operating mechanism to facilitate opening of the  
contacts.
2.        The switch of claim 1 where:  
20      the pair of pry bars, at their abutting ends, are located, relative to the  
contacts on the blades, opposite the direction of movement of the contacts during switch  
opening.
3.        The switch of claim 1 in a combination further comprising:  
25      two additional center break switches each with pairs of switch blades and  
related contacts, pry bars, line terminals and support structures, arranged like those of the  
first mentioned switch, with each of the three pairs of blades being connectable at their  
line terminals to a respective phase of a three-phase electrical system; and  
an operating mechanism for all three pairs of switch blades is arranged for  
common operation by a single source of motive power.
- 30      4. The combination of claim 3 where:  
the operating mechanism includes a manual operator or a motor operator.

5. The switch of claim 1 where:

the switch contacts engage each other with sliding friction during a period of movement of the switch blades from the closed to open positions.

6. The switch of claim 5 further comprising:

5 a contact tightening mechanism that allows adjusting the pressure on the contacts in the closed position to a desired amount.

7. The switch of claim 5 where:

the contacts, at least in part, have a configuration with mutual engagement in a plane substantially the same as that in which the arcuate movement of the blades 10 occurs.

8. The switch of claim 5 where:

the support structure of each blade is insulative and extends a length from the base with an axis of rotation running along the length; and

the axes of the pair of blade support structures are either substantially 15 parallel to each other or are substantially in a V configuration with the bottom of the V located at the base of the switch.

9. The switch of claim 8 where:

the pry bars each comprise a rigid member secured to the respective blades so extremities of the bars face each other in the fully closed position of the switch 20 contacts and mechanically engage as a pivot axis for a time during which the contacts engage with sliding friction.

10. The switch of claim 9 where:

the bars are secured to the blades at locations for attachment of additional elements for arc suppression.

25 11. The switch of claim 9 where:

the bars are of metal and are shaped and are attached to the blades with space avoiding any direct contact to the switch contacts and with a small gap, in the fully closed position, avoiding direct contact to each other.

12. The switch of claim 11 where:

30 the bars each have a flange-like portion at the extremities.

13. The switch of claim 9 where:

the bars, at least the extremities thereof, are insulative and are arranged with either a small gap or no gap between them in the closed position.

14. The switch of claim 9 where:

5 the bars are plate-like members with the extremities substantially parallel to the plane of arcuate movement of the switch blade;

the extremities of the plate-like members each have a corner edge, on the side thereof away from the contacts, that engage to provide the pivot axis.

15. A center break switch comprising:

10 a pair of insulative supports, in either parallel relation or in a V-configuration, arranged for mutual rotation of a supported pair of contact blades and contacts and further having, proximate the contacts, a fulcrum mechanism that provides a prying action increasing leverage to overcome friction between the contacts during switch opening.

15 16. The switch of claim 15 where:

the fulcrum mechanism comprises a pair of bars respectively attached to the pair of contact blades and the bars engage each other and together form a pivot axis to provide the prying action as the switch contacts slide against each other during the switch opening.

20 17. The switch of claim 15 where:

the contacts have frictional engagement during switch opening in a first plane in which the blades move during rotation of the supports or a second plane perpendicular to the first plane, or in both planes.

18. The switch of claim 15 where:

25 The fulcrum mechanism comprises a pair of members respectively attached to each of the pair of contact blades.

19. The switch of claim 15 where:

the fulcrum mechanism comprises a pair of elements respectively integral with each of the pair of contact blades.